



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

TOBIAS GERLACH

Group Art Unit: 2857

Serial No.: 10/678,799

Examiner: West, Jeffrey R.

Filed: October 3, 2003

For: METHOD FOR DETERMINING THE FREQUENCY OF  
THE CURRENT RIPPLE IN THE ARMATURE CURRENT  
OF A COMMUTATED DC MOTOR

Attorney Docket No.: KOA 0242 PUS (R 1415)

REPLY BRIEF UNDER 37 C.F.R. § 41.43(b)

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
U.S. Patent & Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Reply Brief is in response to the Supplemental Examiner's Answer mailed July 13, 2005 for the above-identified patent application.

Initially, the Applicant notes that irrespective of the arguments set forth on page 11, lines 9-13 of the Applicant's Appeal Brief as noted by the Examiner in the Supplemental Examiner's Answer, that the Applicant does not admit that the voltage signal of Falk contains "the interference". This is clear from a more thorough study of Falk as described by the

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

I hereby certify that this paper, including all enclosures referred to herein, is being deposited with the United States Postal Service as first-class mail, postage pre-paid, in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, U.S. Patent & Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 on:

July 26, 2005  
Date of Deposit

James N. Kallis  
Name of Person Signing

Signature

Applicant on page 2, line 15 through page 3, line 20 of the Applicant's Reply Brief mailed May 31, 2005. As set forth in this Reply Brief, the voltage signal of Falk has an interference component which is "approximately proportional" to the interference component of the current signal (see col. 3, lines 35-43 of Falk).

The Examiner posited in the Supplemental Examiner's Answer that in the preferred embodiment of Falk, relied by the Examiner in the rejection, the control loop is controlled so that no overcompensation or undercompensation occurs. The Examiner cited col. 2, lines 18-22 of Falk as an example description of the preferred embodiment in which the useful current signal is determined by removing interference from the current signal through subtraction of a voltage signal containing the interference. Col. 2, lines 18-22 of Falk:

A signal corresponding to this interference voltage is used to compensate the disturbing component of the current signal brought about by this same interference voltage, this being achieved by means of a control loop acting through the polarity comparator mentioned.

As such, the Applicant understands that in the preferred embodiment of Falk relied by the Examiner in the rejection a control loop acting through a polarity comparator is used to obtain a voltage signal containing "the" interference. No overcompensation or undercompensation occurs as a result of obtaining a voltage signal containing "the" interference.

However, as noted, a control loop arrangement (the control loop acting through the polarity comparator) is used to obtain a voltage signal containing "the" interference. The control loop arrangement (elements 22, 3, 4, and 5 shown in FIG. 1 of Falk) is arranged to subtract a voltage signal containing interference "approximately proportional" from the current signal containing "the" interference in order to determine how much gain (K) is needed to multiply the voltage signal such that the voltage signal contains "the" interference. As such, the control loop arrangement is configured to derive a voltage signal containing "the"

interference based on a previous comparison between (i) a voltage signal containing interference "approximately proportional" to "the" interference contained in the current signal with (ii) the current signal which contains "the" interference.

In contrast, in the claimed invention, the voltage signal containing "the" interference contained in the armature current signal is "of the motor" and, as such, is not derived in part based on a comparison with the armature current signal using a feedback configuration such as disclosed in Falk. Accordingly, what the cited prior art including Matsumoto and Falk fail to suggest without the benefit of the Applicant's disclosure is where to find a voltage signal that contains the same interference contained in the armature current signal and at the same time is essentially void of contributions resulting from the current ripples contained in the armature current signal without requiring the use of feedback configurations, comparisons between the voltage and current signals at previous places in time, etc. Such a voltage signal is the claimed and disclosed motor voltage signal.

Therefore, in view of the foregoing reasons set forth above and in the previously filed Appeal and Reply Briefs, the Applicant respectfully requests that the Board holds that the claims are patentable under 35 U.S.C. § 103(a) over the cited prior art references.

Respectfully submitted,

**TOBIAS GERLACH**

By: 

James N. Kallis  
Registration No. 41,102  
Attorney for Applicant

Date: July 26, 2005

**BROOKS KUSHMAN P.C.**  
1000 Town Center, 22nd Floor  
Southfield, MI 48075-1238  
Phone: 248-358-4400; Fax: 248-358-3351